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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,911	01/21/2004	James A. Yurko	PR113 P-316	4426

277 7590 08/24/2004

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EXAMINER
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LIN, ING HOUR

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/761,911	Applicant(s) YURKO ET AL.	
	Examiner Ing-Hour Lin	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>0820</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
3. Claims 15-16, 18-23 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richard et al in view of Adachi et al.

Richard et al (col. 3, lines 25+) teach the claimed method and apparatus for directly producing a metal component from a liquid metal alloy composition, comprising: constantly agitating a quality of liquid metal alloy in a holding vessel into a non-dendritic semi-solid slurry

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having solid component up to 45% by weight using an agitator, Richard et al fail to teach the use of ceasing agitating the slurry and transferring agitated slurry into a cooling vessel before using the slurry for shaping into a desired metal component.

However, Adachi et al (col. 77, lines 41+) teach the use of ceasing agitating the slurry and transferring agitated slurry (crystal nuclei) into a cooling vessel for spheroidizing the slurry into a targeted solid content in the semi-solid before using the slurry for shaping (molding) into a desired metal component for the purpose of reducing energy and casting cycle time, wherein stainless steel is used for the wall of cooling vessel (Fig. 33a) and BN and graphite (col. 78, lines 45+) having low wettability with molten metal are used for coating the cooling vessel; and blown air (col. 47, lines 9+) are used for the purpose of controlling the cooling rate and obtaining a targeted solid content in the semi-solid. It would have been obvious to one having ordinary skill in the art to provide Richard et al the use of ceasing agitating the slurry and transferring agitated semi-solid into a cooling vessel as taught by Adachi et al in order to effectively control cooling the semi-solid and obtain a targeted solid content in the semi-solid.

7. Claims 1-14, 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richard et al in view of Adachi et al and further in view of Otaki et al.

Richard et al in view of Adachi et al fail to teach the use of a graphite agitator and a graphite vessel. However, Otaki et al (col. 2, lines 47+) teach the use of a graphite agitator (col. 6, lines 63+) and a graphite vessel (col. 12, lines 27+) for the purpose of reducing splash or molten aluminum because graphite has low wettability with molten metal. It would have been obvious to one having ordinary skill in the art to provide Richard et al in view of Adachi et al the

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use of a graphite agitator and a graphite vessel as taught by Otaki et al in order to effectively reduce splash of molten metal such as aluminum because graphite has low wettability with molten metal.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (8:00-5:30) Second Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*I.H.L.*

I.-H. Lin

8-20-04

KILEY S. STONER  
PRIMARY EXAMINER

*Kyle Stoner* 8/23/04